IN THE CLAIMS

Claim 1 has been amended as follows:

1. (Currently amended) A method for determining a moisture content of air comprising the steps of:

during a calibration procedure, introducing an air sample into an acoustic analyzer;

in said acoustic analyzer, interacting acoustic energy with the air sample to obtain acoustic velocity-related information from the air sample;

in said acoustic analyzer, determining compositional information for at least one of oxygen and nitrogen in said air sample using said acoustic velocity-related information;

in said acoustic analyzer, determining a deviation of said compositional information from expected compositional information for dry air; ~~and~~

during a measurement procedure following said calibration procedure, introducing an oxygen/air gas sample into the acoustic analyzer;

in said acoustic analyzer, interacting acoustic energy with the oxygen/air gas sample to generate further acoustic velocity-related information for said oxygen/air gas sample;

in said acoustic analyzer, determining further compositional information for an oxygen content of said oxygen/air gas sample using said further acoustic velocity-related information and said moisture content value calculated for said air sample; and

in said acoustic analyzer, calculating a moisture content value for the air sample from said deviation.

Claim 2 has been amended as follows:

2. (Currently amended) A method as claimed in claim 1 comprising, in said calibration procedure:

introducing a sample of said dry gas into said acoustic analyzer, said dry gas sample having a known composition of at least one constituent gas;

in said acoustic analyzer, interacting acoustic energy with said sample of said dry gas for obtaining further acoustic velocity-related information for said sample of said dry gas;

in said acoustic analyzer, determining further compositional information for said at least one constituent gas in said sample of said dry gas using said further acoustic velocity-related information; and

in said acoustic analyzer, calculating a calibration value dependent on a deviation of said further compositional information from said known composition, and using said calibration value in the calculation of said moisture content value.

3. (Original) A method as claimed in Claim 2 wherein the step of introducing a sample of said dry gas into the acoustic analyzer comprises introducing oxygen into the acoustic analyzer as said sample of said dry gas.

Claim 4 has been cancelled.

4. (Cancelled)

Claim 5 has been amended as follows:

5. (Currently amended) A mechanical breathing aid comprising:

a first inlet adapted for connection to a source of air;

a second inlet adapted for connection to a source of oxygen;

a mixing location in gaseous communication with said first and second inlets at which controlled amounts of air and oxygen from the respective first and second inlets are mixed to form a breathing gas; and

an acoustic analyzer having access to a moisture content value for air from said source of air, said acoustic analyzer emitting acoustic energy into said breathing gas and, from interaction of said acoustic energy with said breathing gas, obtaining acoustic velocity-related information from said breathing gas, said acoustic analyzer determining an oxygen content value of said breathing gas from said acoustic velocity-related information, and, during a calibration procedure, obtaining further acoustic velocity-related information by interacting acoustic energy with air from said source of air and, from said further acoustic velocity-related information, determining an oxygen content value for the air and, from said oxygen content value for the air, calculating ~~a~~ the moisture content value for the air.